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# EUROPEAN PATENT OFFICE

## Patent Abstracts of Japan

PUBLICATION NUMBER : 62046580  
PUBLICATION DATE : 28-02-87

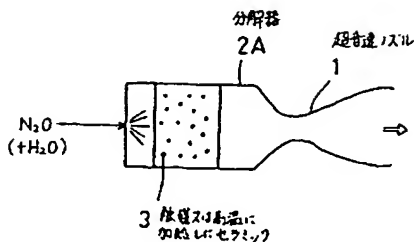
APPLICATION DATE : 26-08-85  
APPLICATION NUMBER : 60185854

APPLICANT : TECH RES & DEV INST OF JAPAN DEF  
AGENCY;

INVENTOR : KITAGAWA KATSUSHI;

INT.CL. : H01S 3/05

TITLE : MIXED TYPE GAS DYNAMIC LASER



ABSTRACT : PURPOSE: To miniaturize the titled laser, and to reduce cost thereof by decomposing nitrous oxide by a catalyst or ceramics heated at a high temperature and using a high-temperature cracked gas as a doner gas.

CONSTITUTION: Nitrous oxide as a liquid or a gas at the normal temperature is decomposed by catalysis or heat energy when it passes through a cracker 2A into which a catalyst or ceramics 3 heated at a high temperature is introduced, and decomposed into a gas of  $N_2 + (1/2)O_2$  at a high temperature. Nitrous oxide as the liquid is fed to the cracker 2A in an atomizing form by an injector in this case. A cracked gas acquired is expanded adiabatically through a supersonic nozzle 1, and  $CO_2$  from a nozzle such as another supersonic one is mixed on the down-stream side of a throat for the nozzle. Since high laser performance is not obtained only by a cracked gas of  $N_2O$  and a small quantity of  $H_2O$  must be made to be contained in the cracked gas, water is blown in at some point in an inlet, an outlet, etc. for the cracker 2A.

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